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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,605	09/05/2006	Kenichi Fukuoka	295982US2PCT	3402
22850 7590 02/27/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MACCHIAROLO, PETER J	
			ART UNIT	PAPER NUMBER
			2879	
			NOTIFICATION DATE	DELIVERY MODE
			02/27/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<i>Office Action Summary</i>	Application No. 10/591,605	Applicant(s) FUKUOKA ET AL.	
	Examiner PETER J. MACCHIAROLO	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.  
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/22/2008</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

The reply filed on 11/25/2008 consists of changes to the claims and remarks related to the prior rejection of claims in the previous Office Action. The above have been entered and considered. However, pending claims 1-11 are not allowable as explained below.

### *Information Disclosure Statement*

The information disclosure statement (IDS) submitted on 08/22/2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant cited Burroughes et al (GB 2 349 979; “Burroughes”).

Regarding claims 1 and 11, Burroughes discloses at least in fig. 2 and the abstract an organic electro luminescent device comprising at least: a first light reflecting layer (12), a first transparent electrode (13, see page 4), an organic emitting layer (15), a second transparent electrode (16, see page 7) and a second light reflecting layer (17) stacked on a substrate (10) in

Art Unit: 2879

this order; at least one of the first light reflecting layer and the second light reflecting layer being light semi-transmissive (see abstract), wherein the first light reflecting layer (12), the first transparent electrode (13), the organic emitting layer (15), the second transparent electrode (16) and the second light reflecting layer (17) comprise a single optical path (19) length for light reflection.

Regarding claim 9, Burroughes discloses at least on page 6 that the first reflecting layer is a single unitary later.

Regarding claim 10, Burroughes discloses at least on page 9 that all or substantially all light is reflected between the first and second reflective layers.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes.

Regarding claim 2, Burroughes discloses in at least pages 1 and 2 that a plurality of wavelengths of light is typically transmitted through the multilayer mirror structure, but is silent

Art Unit: 2879

to the emission from the organic electro luminescent device having at least 3 peaks in the wavelengths of 400 to 800 nm.

However, this is an obvious configuration to one of ordinary skill in the art, since it is well known that to produce a white light, the OLED must emit at least a peak in each of red, green and blue wavelength spectrum (which are all between 400 and 800nm).

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes with the emission from the organic electro luminescent device having at least 3 peaks in the wavelengths of 400 to 800 nm to produce an OLED device capable of emitting white light.

Regarding claim 4, Burroughes discloses at least on pages 6-7 the average thickness of all layers interposed between the first and second light reflecting layer is 100 to 1000nm.

The Examiner notes that even if Burroughes was silent to this configuration, Burroughes teaches that finding the thicknesses for the layers is dependent of the specific wavelength to be optimized, and that one of ordinary skill in the art would be able to suitably select the thicknesses.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes with the average thickness of all layers interposed between the first and second light reflecting layer is 100 to 1000nm to optimize the device for a specific wavelength.

Art Unit: 2879

Regarding claim 5, Burroughes discloses at least in pages 4 and 7 that the first and second transparent electrodes are formed of an oxide of one kind or two or more kinds of elements selected from the recited Markush group.

The Examiner notes that even if Burroughes was silent to this configuration, the materials recited in Applicant's Markush group are well-known materials to be used for transparent or semi-transparent electrodes, and one of ordinary skill in the art would be motivated to use one of the recited materials for a variety of reasons, including material availability.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes with the first and second transparent electrodes are formed of an oxide of one kind or two or more kinds of elements selected from the recited Markush group for a variety of reasons, including material availability and reduced manufacturing costs.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes in view of previously cited Cok et al. (USPGPUB 20040004988; "Cok").

Regarding claim 3, Burroughes is silent to a light transmitting protective layer between the second electrode and the second light reflecting layer.

However, Cok teaches in at least paragraph 44 that this configuration can protect the transparent electrode.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes

Art Unit: 2879

with a light transmitting protective layer between the second electrode and the second light reflecting layer to protect the transparent electrode.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes in view of previously cited Weaver et al. (USPGPUB 5714838: "Weaver").

Regarding claim 6, Burroughes is silent to the first light reflecting layer being provided with a light diffusion part.

However, Weaver teaches at least in paragraph 50 that the first light reflecting layer (320b corresponding to 120) is provided with a light diffusion part (high-density material 122a-c, inherently diffuses light). Even in Burroughes and Weaver were silent to including a light diffusion part to the first light reflecting layer, the Examiner hereby takes Official Notice that including a light diffusion part to a transparent electrode is well known in the art to increase the resultant viewing angle.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes and Weaver with including a light diffusion part to a transparent electrode to increase the resultant viewing angle of the device.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes in view of previously cited Kimura (JP 2003272855; "Kimura"). Previously cited USPGPUB 20060124920 to Kimura is used herein for translation and reference.

Art Unit: 2879

Regarding claims 7 and 8, Burroughes is silent to the OLED having a color conversion member or a color filter.

However, as taught by Kimura in at least paragraph 41, both these configurations allows for increased color purity and luminescence.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Burroughes with a color conversion member or a color filter to increase color purity and luminescence.

#### *Response to Arguments*

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



Art Unit: 2879

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for UNPUBLISHED applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

/Peter Macchiarolo/  
Primary Examiner, Art Unit 2879  
(571) 272-2375